

REMARKS

Initially, Applicant expresses appreciation to the Examiner for the detailed Official Action provided. Furthermore, Applicant expresses appreciation to the Examiner for acknowledgment that the drawings are acceptable, for the acknowledgment of Applicant's Claim for Priority and Receipt of the certified copy of the priority document, and for the acknowledgment of Applicant's Information Disclosure Statements (IDSs) filed on July 18, 2006, September 29, 2006, and December 8, 2006.

Additionally, Applicant expresses appreciation to the Examiner for the indication on Page 12 of the Official Action that claim 18 contains allowable subject matter.

Upon entry of the present paper, claims 12-16 and 18 will have been amended, and claims 1-11 and 17 will have been cancelled without prejudice or disclaimer of the subject matter thereof. The herein-contained amendments should not be considered an indication of Applicant's acquiescence as to the propriety of the outstanding rejection. Rather, Applicant has amended claims 12 and 18 and cancelled claims 1-11 and 17 in order to advance prosecution and obtain early allowance of the claims in the present application. Thus, upon entry of the present paper, claims 12-16 and 18 are pending in the present application, with claims 12 and 18 being in independent form.

Applicant addresses the objection and rejections provided within the Official Action below and respectfully requests reconsideration and withdrawal of the outstanding objection and rejections pending in the present application together with an indication of the allowability of claims 12-16 and 18 (*i.e.*, all pending claims) in the next Official communication. Such action is respectfully requested and is believed to be appropriate for at least the reasons provided below.

35 U.S.C. § 112 Claim Rejections

In the outstanding Official Action, claims 1-18 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, it was asserted that the limitation of claims 1 and 12 of “said light transmitting film” lacks antecedent basis.

By the present paper, without acquiescing in the propriety of the rejection, independent claim 1, and claims 2-11 which depend therefrom, have been cancelled and independent claim 12 has been amended to provide proper antecedent basis for the above-noted limitation. Accordingly, Applicant submits that the grounds for the rejection under 35 U.S.C. § 112, second paragraph, no longer exist and respectfully requests withdrawal of the rejection.

35 U.S.C. § 102 Rejection of Claims 1-9 and 11

Claims 1-9 and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Pat. App. Pub. No. 2001-108812 to Tamechika et al (hereinafter “TAMECHIKA”).

By the present paper, without acquiescing in the propriety of the rejection, claims 1-9 and 11 have been cancelled. Thus, Applicant submits that the grounds for the rejection no longer exist and respectfully requests withdrawal of the rejection.

35 U.S.C. § 103 Rejection of Claim 10

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over TAMECHIKA in view of U.S. Pat. Appl. Pub. No. 2005/0061950 to Jiang et al. (hereinafter “JIANG”).

By the present paper, without acquiescing in the propriety of the rejection, claim 10 has been cancelled. Thus, Applicant submits that the grounds for the rejection no longer exist and respectfully requests withdrawal of the rejection.

35 U.S.C. § 103 Rejection of Claims 12-16

Claims 12-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over TAMECHIKA in view of U.S. Pat. Appl. Pub. No. 2003/0215967 to Shizukuishi (hereinafter “SHIZUKUISHI”).

Initially Applicant notes that, by the present paper and without acquiescing in the propriety of the outstanding rejection, independent claim 12 has been amended to incorporate the indicated allowable subject matter of claim 18. In this regard, Applicant respectfully traverses the rejection of claims 12-16 under 35 U.S.C. § 103.

Independent claim 12 generally recites that a plurality of unit pixels are arranged in a two-dimensional array with each unit pixel including a light-collector and a light-receiver. According to amended independent claim 12, for each unit pixel located in a center of a plane on which the unit pixels are formed, a central axis of the light-receiver matches a central axis of the light-collector. Furthermore, for each unit pixel located in a periphery of the center of the plane, a central axis of the light-receiver and a central axis of the light-collector extend toward the center of the plane. According to such features, light collection efficiency of the unit pixels is improved without using a microlens. Thus, it is possible to achieve a solid-state imaging apparatus having high resolution and high sensitivity. In addition, it is possible to form a low-level shrink structure, which further improves light collection efficiency of peripheral pixels. Applicants respectfully submit

that TAMECHIKA and SHIZUKUISHI, alone or in combination, fail to disclose or render obvious such features.

To the contrary, it is submitted that TAMECHIKA discloses an optical element in which regions are arranged side-by-side in the same direction on a substrate onto which light is incident (TAMECHIKA, ¶[0016]). In each region, a value of an effective refractive index slowly changes from the maximum value to the minimum value, wherein a periodic repetition of a microstructure with a wavelength less than the incident light is embedded in each region for controlling the effective refractive index (TAMECHIKA, ¶[0016]). Furthermore, a pattern distribution of the microstructure changes in the periodic repetition of the microstructure.

Furthermore, SHIZUKUISHI is merely relied upon to disclose a solid-state imaging device including a plurality of unit pixels arranged in a two-dimensional array, wherein each of the plurality of unit pixels includes a light collecting element (see, e.g., SHIZUKUISHI, Abstract and Figure 1B).

In view of the above, Applicants respectfully submit that neither TAMECHIKA nor SHIZUKUISHI disclose or render obvious the recited features of amended independent claim 12 of wherein, for each unit pixel located in a center of a plane on which the unit pixels are formed, a central axis of the light-receiver matches a central axis of the light-collector, and, for each unit pixel located in a periphery of the center of the plane, a central axis of the light-receiver and a central axis of the light-collector extend toward the center of the plane. Accordingly, at least for the reasons set forth above, Applicants respectfully submit that TAMECHIKA and SHIZUKUISHI, in the combination set forth by the Examiner, fail to disclose or render obvious each and every

feature recited by amended independent claim 12. Thus, Applicant submits that independent claim 12 is not rendered obvious thereby.

With respect to the rejection of dependent claims 13-16, Applicant submits that these claims are all directly or indirectly dependent from independent claim 12, which is allowable for at least the reasons discussed *supra*. Thus, these dependent claims are submitted to also be allowable for at least the reasons discussed *supra*. Furthermore, all dependent claims recite additional features which further define the present invention over the references of record.

Accordingly, at least in view of the above, Applicant respectfully submit that TAMECHIKA and SHIZUKUISHI, alone or in combination, fail to disclose or render obvious claims 12-16. Thus, Applicant respectfully requests the Examiner to withdraw the rejection of these claims under 35 U.S.C. § 103.

35 U.S.C. § 103 Rejection of Claim 17

Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over TAMECHIKA in view of SHIZUKUISHI and further in view of U.S. Pat. Appl. Pub. No. 2004/0000681 to Shinohara et al. (hereinafter "SHINOHARA").

By the present paper, without acquiescing in the propriety of the rejection, claim 17 has been cancelled without prejudice or disclaimer of the subject matter thereof. Accordingly, Applicant submits that the grounds for the rejection no longer exist and respectfully requests withdrawal of the rejection.

Objection to Claim 18

Lastly, on page 12 of the outstanding Official Action, it was indicated that claim 18 contains allowable subject matter. Specifically, claim 18 was objected to as being

dependent upon a rejected base claim, but was otherwise indicated to be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims (*i.e.*, independent claim 12 and intervening claim 17) and amended to overcome the 35 U.S.C §112, second paragraph, rejection.

In this regard, without acquiescing in the propriety of the objection, Applicant has rewritten claim 18 in independent form including all of the limitations of base claim 12 and intervening claim 17 and has amended claim 18 to overcome the 35 U.S.C. § 112, second paragraph, rejection. Thus, Applicant respectfully submits that claim 18 is in condition for allowance and requests the Examiner to indicate the allowability of claim 18 in the next official communication.

At least for the reasons set forth above, Applicant respectfully submits that each and every pending claim of the present application (*i.e.*, claims 12-16 and 18) meets the requirements for patentability. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections and objections and to indicate the allowance of each and every pending claim in the present application.

CONCLUSION

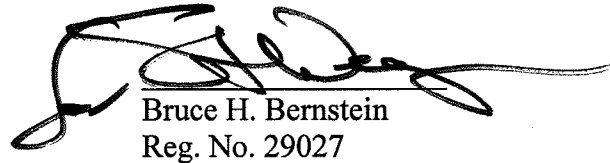
In view of the fact that none of the art of record, whether considered alone, or in any proper combination thereof, discloses or renders obvious the present invention as now defined by the pending claims, and in further view of the above amendments and remarks, reconsideration of the Examiner's action and allowance of the present application are respectfully requested and are believed to be appropriate.

Applicant notes that this amendment is being made to advance prosecution of the application to allowance, and should not be considered as surrendering equivalents of the territory between the claims prior to the present amendment and the amended claims. Further, no acquiescence as to the propriety of the Examiner's rejection is made by the present amendment. All amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Commissioner determine that an extension of time is required in order to render this response timely and/or complete, a formal request for an extension of time, under 37 C.F.R. §1.136(a), is herewith made in an amount equal to the time period required to render this response timely and/or complete. The Commissioner is authorized to charge any required extension of time fee under 37 C.F.R. §1.17 to Deposit Account No. 19-0089.

If there should be any questions concerning this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,
Kimiaki TOSHIKIYO



Bruce H. Bernstein
Reg. No. 29027

Steven Wegman
Reg. No. 31,438

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GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191